PRO-TECH

SIGNALING E196731 C UL US LISTED

IAS 6-96-2nd EDITION CO ALARM

C US CSA-6.19-01

OWNER'S MANUAL for Models:

7030/ SL	9 Volt Battery CO Alarm, Single Station.
7035/ SL	9 Volt Battery CO Alarm with LCD Digital Display & Peak Level Memory, Single Station.

ELECTRICAL RATING: 9VDC, 0.16 mWatts.

IMPORTANT! **READ ALL INSTRUCTIONS BEFORE INSTALLATION AND SAVE THIS MANUAL FOR FUTURE REFERENCE**

CAUTION! **THIS ALARM WILL ONLY INDICATE THE PRESENCE OF CARBON MONOXIDE GAS AT THE SENSOR. CARBON MONOXIDE GAS MAY BE PRESENT IN OTHER AREAS. THIS CARBON MONOXIDE ALARM IS DESIGNED TO DETECT CARBON MONOXIDE GAS FROM ANY SOURCE OF COMBUSTION. IT IS NOT DESIGNED TO DETECT SMOKE, FIRE OR ANY OTHER GAS. THIS DEVICE IS DESIGNED TO PROTECT INDIVIDUALS FROM THE ACUTE EFFECTS OF CARBON MONOXIDE EXPOSURE. IT WILL NOT FULLY SAFEGUARD INDIVIDUALS WITH SPECIFIC MEDICAL CONDITIONS. IF IN DOUBT CONSULT A MEDICAL PRACTITIONER.**

CONTENTS OF THIS MANUAL.

WARNING! **DISCONNECTING OR LOW VOLTAGE BATTERY WILL RENDER THIS UNIT INOPERATIVE.**

Do not try to repair this CO alarm yourself. Refer to the instructions in SECTION 11 for service.

1. INFORMATION ABOUT CARBON MONOXIDE

WHAT IS CARBON MONOXIDE?

Carbon monoxide (CO) is a highly toxic, invisible, odorless, tasteless gas.

HOW IS CO GENERATED IN THE HOME?

Carbon monoxide is generated through incomplete combustion of fuel in various home appliances. Faulty ventilation of furnaces, water heaters, fireplaces, wood burning stoves, and space heaters are the major of cause of high CO levels in the home. Automobile and small engine exhaust are another source of CO.

HOW DOES CO POISON PEOPLE?

The human body depends on oxygen for the burning of fuel (food) to provide us with the energy that allows our cells to live and function. Oxygen makes up approximately 21% of the atmosphere and enters our lungs when we breathe. In our lungs the oxygen combines with the hemoglobin in the blood (oxyhemoglobin) and is carried in the blood stream throughout the body where it releases oxygen to the cells.

Carbon monoxide is dangerous because it bonds more tightly to the hemoglobin (carboxyhemoglobin, COHb) than oxygen does. When CO combines with hemoglobin, the hemoglobin's ability to combine with oxygen is lost. As the COHb concentration rises, people become nauseous, unconscious and ultimately die (see below).

WHAT ARE THE SYMPTOMS OF CARBON MONOXIDE POISONING?

Many people often confuse carbon monoxide poisoning with the flu; the initial symptoms being very similar. Different concentrations of CO over various lengths of time cause different symptoms.

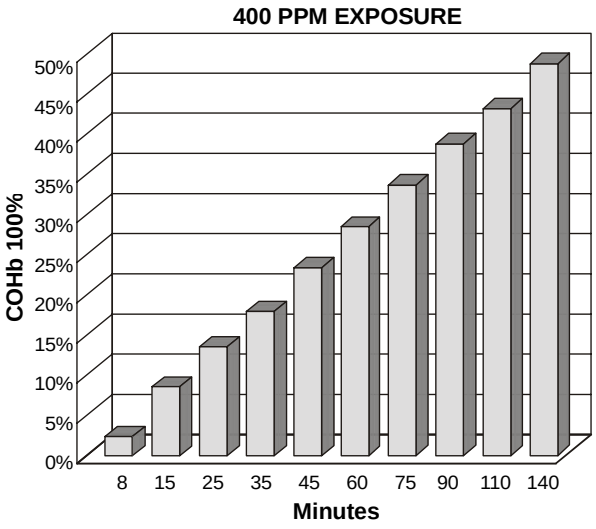
Many cases of carbon monoxide poisoning indicate that while the victims were aware that they were not well, they were too disoriented to save themselves by either calling for assistance or exiting the building. Also, due to size, small children and pets are generally the first affected.

The following are the symptoms related to *CARBON MONOXIDE POISONING.* Discuss them with all members of the household.

MILD EXPOSURE:	Headaches, running nose, sore eyes, often described as “flu”-like symptoms.
MEDIUM EXPOSURE:	Dizziness, drowsiness, vomiting.
EXTREME EXPOSURE:	Unconsciousness, brain damage, death

CO GAS EXPOSURE VERSUS TIME
(400 PPM EXPOSURE)

MINUTES	RESPONSE
8	NONE
15	NONE
25	SLIGHT HEADACHE
35	HEADACHE
45	HEADACHE AND NAUSEA
60	DROWSY
75	VOMITING
90	COLLAPSE
110	COMA AND PERMANENT BRAIN DAMAGE
140	PERMANENT BRAIN DAMAGE – DEATH



2. SPECIFICATIONS

CO RESPONSE TIME	@ 70 PPM 60~240 MINUTES @150 PPM 10~50 MINUTES @ 400 PPM 4~15 MINUTES
POWER SOURCE	9V Battery
OPERATING TEMPERATURE	40°F (4.4°C) TO 100°F (37.8°C)
ALARM	85 dB AT 10 FEET
DETECTION FREQUENCY	SAMPLES EVERY 2 MINUTES
LCD DISPLAY (FOR MODELS 7035/SL):	
1. DIGITAL READ-OUT OF CURRENT CO DETECTED AND PEAK LEVEL MEMORY	FROM 0 PPM TO 500 PPM, WILL FLASH "500" IF LEVEL EXCEEDS 500 PPM.
2. PEAK LEVEL TIME RECORD (THE TOTAL TIME CO IS DETECTED WITHIN 10% OF THE PEAK LEVEL)	FROM 0 TO 999 MINUTES, WILL FLASH “999” IF LEVEL EXCEEDS 999 MINUTES.
3. COHb RANGE (CARBOXYHEMOGLOBIN)	FROM 0.0% TO 99.9%, WILL FLASH “99.9%” IF LEVEL EXCEEDS 99.9 %.
DISPLAY TOLERANCE @ 50% RH, 22°C±3°C IN UPRIGHT POSITION	± 30% @ 30-500 PPM
BATTERY TYPE	LONG-LIFE ULTRALIFE U9VL-J LITHIUM POWER CELL

WARNING! This product is intended for use in ordinary indoor locations **of family living units. It is not designed to measure compliance with Occupational Safety and Health Administration (OSHA) commercial or industrial standards. Individuals with medical problems may consider using warning devices which provide audible and visual signals for carbon monoxide concentrations under 30 ppm.**

⚠ WARNING

Actuation of this device indicates the presence of carbon monoxide (CO) which can KILL YOU.

If alarm signal sounds (the red LED will flash and the alarm will sound 4 short beeps in every 6 seconds):

1) **Operate reset/silence button to temporarily silence alarm;**
2) **Immediately move to fresh air - outdoors or by an open door or window. Check that all persons are accounted for. Do not re-enter the premises or move away from the open door/window until the emergency services responders have arrived, the premises have been aired out, and your alarm remains in its normal condition;**
3) **Call your emergency services (tel. no.) [fire department or 911].**
4) **After following steps 1- 3, if your alarm reactivates within a 24 hour period, repeat steps 1-3 and call a qualified appliance technician (tel. no.) to investigate for sources of CO from fuel burning equipment and appliances, and inspect for proper operation of this equipment. If problems are identified during this inspection, have the equipment serviced immediately. Note any combustion equipment not inspected by the technician and consult the manufacturers' instructions, or contact the manufacturers directly, for more information about CO safety and this equipment. Make sure that motor vehicles are not, and have not been, operating in an attached garage or adjacent to the residence.**

If "service" (trouble) signal sounds (the red LED will flash twice and the alarm will sound 2 short beeps every minute):
See SECTION 11 for return address for servicing.

Conditions which can result in transient CO situations such as:

1) **Excessive spillage or reverse venting of fuel burning appliances caused by outdoor ambient conditions, such as:**
   i) **Wind direction and/or velocity, including high gusts of wind. Heavy air in the vent pipes (cold/humid air with extended periods between cycles).**
   ii) **Negative pressure differential resulting from the use of exhaust fans.**
   iii) **Simultaneous operation of several fuel burning appliances competing for limited internal air.**
   iv) **Vent pipe connections vibrating loose from clothes dryers, furnaces, or water heaters.**
   v) **Obstructions in or unconventional vent pipe designs which can amplify the above situations.**
   vi) **Poorly designed or maintained chimneys and/or vents.**
2) **Extended operation of unvented fuel burning devices (**range, oven, fireplace, etc.**).**
3) **Temperature inversions which can trap exhaust gases near the ground.**
4) **Car idling in an open or closed attached garage, or near a home.**

3. RECOMMENDED LOCATION OF ALARMS:

The Consumer Products Safety Commission (CPSC) recommends the use of "At least one CO alarm per household located outside each sleeping area" (see diagram "A").

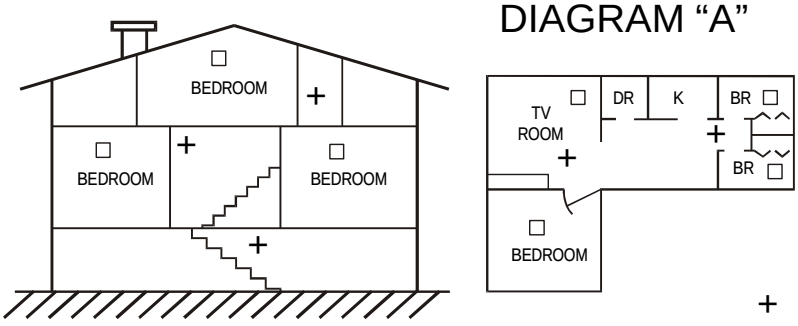
CO poisoning can happen anywhere in the home, but because most CO poisoning cases occur while people are sleeping, the best location for the CO alarm is near the sleeping area in the home. If there is more than one sleeping area in the home, (or on a different floor) or if bedroom doors are closed during the night, you may need more than one CO alarm.

Carbon monoxide at room temperature [68^{o}F (20°C)] is slightly lighter than air (density of 0.96716). However at 32^{o}F (0°C) carbon monoxide is much heavier than air (density of 1.250). Because the density of CO at room temperature is close to the density of air, it disperses easily through the air, similar to the scent of perfume dispersing uniformly in all directions. This characteristic makes it possible for CO alarms to be mounted anywhere in the room or hallway, including both wall and ceiling areas.

- Locate the first alarm in the immediate area of the bedrooms. If more than one sleeping area exists, locate additional alarms in each sleeping area.
- Locate an alarm in every room where someone sleeps with a door closed. The closed door may prevent the alarm from waking the sleeper.
- Locate an alarm on every level of the home.
- For Mobile Home Installation see below (diagram “B”).
- DO NOT install unit within 5 feet of cooking appliances.
- DO NOT install unit on any outside wall.

WARNING! TEST YOUR CO ALARM AFTER MOBILE HOME HAS BEEN VACANT AND AT LEAST ONCE A WEEK DURING USE.

DIAGRAM “A”



+ CO alarm placement for minimum protection.

□ Additional CO alarm location for added protection.

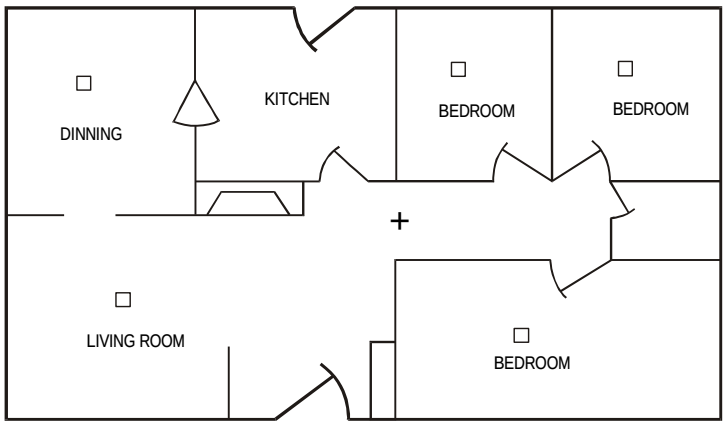


DIAGRAM “B”

4. WARNING! LOCATIONS TO AVOID:

NEAR THE COOKING AREA: CO may be generated in the cooking process and cause nuisance alarms. Also cooking grease can build up on the alarm and cause alarm failure.
CLOSE TO A FURNACE, WATER HEATER, OR SPACE HEATER: These devices often spill out small amounts of CO when they first turn on.
IN GARAGES: Automobile exhaust contains CO and will activate alarm.
IN DUSTY AREAS: Dust can build up on the alarm and cause failure to alarm.
IN CLEANING SUPPLY ROOMS: Chemicals used in household cleaning and painting supplies can cause nuisance alarms.
IN VERY HOT OR COLD AREAS: Do not install the alarm in areas which are below 40°F (4.4°C) or above 100°F (37.8°C).
IN HAZARDOUS LOCATIONS: This alarm is not suitable for installation in a hazardous location, as defined in the National Electrical Code.

5. INSTALLATION INSTRUCTIONS:

NOTE: REVIEW SECTION 3, ***RECOMMENDED LOCATIONS OF ALARMS*** AND SECTION 4, ***LOCATIONS TO AVOID,*** PRIOR TO INSTALLING YOUR ALARM.

- The proper power for the 7030/SL and 7035/SL CO alarms is a 9V battery.
- Constant exposure to high or low humidity may reduce battery life.

BATTERY INSTALLATION AND REPLACEMENT 7030/ 7035:

- Open the battery door (to remove the old battery for replacement) and attach a new 9 Volt battery (Use Ultralife U9VL-J only) to the battery cable. Battery must snap firmly onto both connectors.
- Press the battery reminder lever down, then place the battery on top of the lever in the battery compartment and close the battery door.
- Press the TEST/RESET button to verify activation. (See TESTING in section 6)

BATTERY INSTALLATION AND REPLACEMENT 7030SL/ 7035SL:

- Loosen the security screw on the battery door with the provided allen key (enclosed in the box)
- Open the battery door (to remove the old battery for replacement) and attach a new 9 Volt battery (Use Ultralife U9VL-J only) to the battery cable. Battery must snap firmly onto both connectors.
- Press the battery reminder lever down, then place the battery on top of the lever in the battery compartment.
- Close the battery door, and fasten the security screw into it. (Keep the allen key for future use)
- Pull the Power Tab completely out of the unit to activate the alarm. Press the TEST/RESET button to verify activation. (See TESTING in section 6)

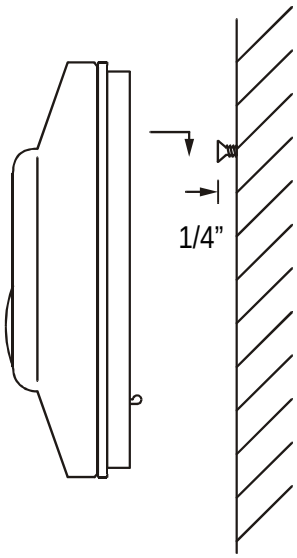
WARNING! DO NOT USE RECHARGEABLE BATTERY, OR ANY OTHER TYPE OF BATTERY, EXCEPT AS SPECIFIED IN THIS MANUAL.

CAUTION! IF THE BATTERY DOES NOT HOLD DOWN THE REMINDER LEVER IN THE BATTERY COMPARTMENT, THE BATTERY DOOR WILL NOT CLOSE AND THE ALARM WILL NOT MOUNT TO THE MOUNTING PLATE.

MOUNTING INSTRUCTIONS:

FOR 7030/ 7035:

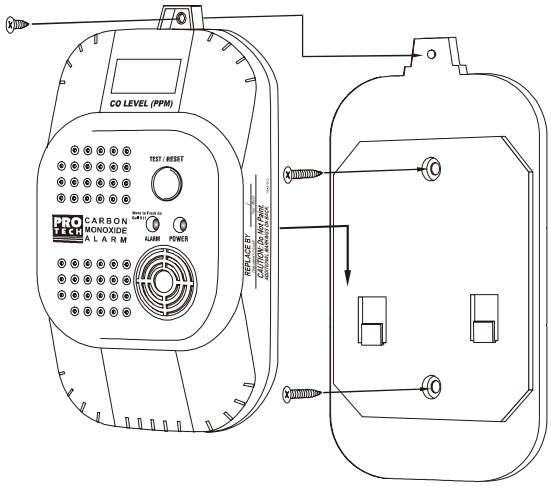
- After selecting the proper alarm location as described in SECTION 3, drive a screw into the wall at eye level leaving the screw-head about ¼ inches from the wall.
- Hang the alarm firmly onto the screw-head.



FOR 7030SL/ 7035SL:

- Remove the mounting plate from the back of the alarm (slide to the unlock position to remove).
- After selecting the proper alarm location as described in SECTION 3, fasten the mounting plate to the wall.

Slide the alarm down onto the mounting plate, and secure it with a screw through the flange on the top of the alarm.



After installation **TEST** your alarm by pressing and holding the **TEST / RESET** button for several seconds. Complete instructions regarding testing are outlined in SECTION 6.

CAUTION! CO detection is best achieved by the installation of CO detection equipment in all rooms and areas of the household.

6. OPERATION, TESTING:

OPERATION: The CO alarm is operational once a battery is installed and testing is complete. The green LED will blink once per minute.

SERVICE (TROUBLE) CONDITION: The internal microcontroller continuously monitors the sensor and other critical components. If an internal failure of any of these components should occur, the alarm will sound 2 short beeps per minute and the red LED will flash twice during the beeping. The trouble condition indicates a problem with the unit. Please see SECTION 11 for information regarding service.

LIFE MONITOR: The electrochemical sensor has an estimated life expectancy of 5 years. The microcontroller monitors the total time that the alarm is under power. After 5 years, the “trouble” signal will activate, indicating that the sensor life has expired.

LOW BATTERY CONDITION: When the battery voltage drops, the alarm will sound one short beep per minute and the green LED will flash. Replace the battery immediately in order to provide uninterrupted protection. Please see SECTION 5 for information regarding battery replacement.

ALARM CONDITION: When CO gas is detected at a level and duration specified in SECTION 2, the alarm will sound and the red LED will flash. The alarm signal will sound 4 short beeps every 6 seconds for 4 minutes, and thereafter 4 short beeps every minute.

MEMORY RETRIEVAL OF CO GAS DETECTED (FOR MODELS 7035/SL): To retrieve from memory the CO gas detected, press **TEST / RESET** button for a minimum of five seconds. The LCD will display the recorded data in the following order:

1. The current CO level detected in ppm,
2. The peak or highest CO level detected in ppm,
3. The total length of time the alarm has detected the peak CO level in minutes, and
4. The percentage of carboxyhemoglobin.

Each reading will appear for two seconds. To erase the record in memory, press **TEST / RESET** button for twelve seconds and until the alarm bursts a long beep and the display shows "000". Disconnecting the battery from the alarm will also erase the memory.

TESTING: To test your alarm, press the **TEST / RESET** button on the cover and hold it down for a minimum of 5 seconds. This will simulate a CO concentration of approximately 400 ppm CO gas and sound the alarm if all the electronic circuitry, and buzzer are working.
The alarm will not sound when the button is pressed if the unit is already in the “trouble” condition.

LCD DISPLAY FUNCTION (FOR MODELS 7035/SL): In normal operation, the LCD display is blank. When the alarm is activated, the LCD display will indicate the current CO level detected in ppm.

DO NOT TRY TO TEST THIS ALARM IN ANY OTHER WAY.

If no alarm sounds during a test, check the battery power. If the alarm still does not sound, the unit may be defective and should be returned for service (SEE SECTION 11).

TEST THE ALARM *WEEKLY* TO ENSURE PROPER OPERATION.

Erratic or low sound coming from your alarm may indicate a defective alarm, and it should be returned for service (SEE SECTION 11).

MAXIMUM "PPM" READING AND OVERFLOW (FOR MODELS 7035/SL): The LCD will display CO concentrations up to 500ppm. Above 500 ppm, the LCD will display a flashing "500".

RESET: The CO alarm will automatically reset itself when the CO gas which caused the alarm has cleared. However, the alarm will activate for at least 4 minutes if it is not manually reset. You can silence the alarm by pressing the **TEST / RESET** button. If a CO concentration of 70 ppm or greater continues to be detected, the alarm will activate again within 4 minutes. See SECTION 2...

⚠ WARNING...If alarm signal sounds:... and follow instructions 1), 2), 3), 4).

7. WARNING:

Carbon monoxide alarms respond to the presence of CO. They do not detect smoke. If the alarm does activate, follow instructions 1 to 4 under WARNING in SECTION 2.

IF YOU HAVE BEEN AWAY FROM HOME and you return to find your alarms sounding, DO NOT ENTER YOUR HOME. Call the Fire Department from a neighbor's home. ***DO NOT RE-ENTER YOUR HOME FOR ANY REASON UNTIL YOU HAVE BEEN ASSURED THAT IT IS SAFE TO DO SO.***

8. MAINTENANCE: CLEANING YOUR ALARM

You can clean your alarm by using a vacuum cleaner hose to vacuum around the openings on the alarm. The outside of the alarm can be wiped with a damp cloth. **AFTER CLEANING, TEST YOUR ALARM BY USING THE TEST BUTTON AND CHECK THAT THE GREEN LED BLINKS ONCE PER MINUTE.**

9. LIMITATIONS OF CARBON MONOXIDE ALARMS

Carbon monoxide alarms are devices that can provide an early warning of the presence of CO gas at a reasonable cost. However alarms have sensing limitations and may not always sound a warning in the presence of CO. The alarm will not operate if the battery power is low or dead. CO alarms must be tested regularly to ensure that they are receiving power and operating properly. Carbon monoxide alarms cannot sense CO that does not reach the alarm, and therefore CO alarms may not detect CO which is in another area of the home. Furthermore if the alarm is located on a different level of the home or on the other side of a closed door it may not waken a sound sleeper. The use of drugs and alcohol may impair ones ability to hear the alarm. If you have a multi-level home, install CO alarms on each level of the home. If the alarm is installed in a hallway and the bedroom doors are kept closed at night, install a CO alarm in each bedroom.

Although CO alarms can help save lives by providing an early warning to the presence of carbon monoxide, they are not a substitute for an insurance policy. Homeowners and renters should have adequate insurance to protect their lives and property.

10. GOOD SAFETY HABITS:

DEVELOP AND PRACTICE A PLAN OF ESCAPE:

- Make a floor plan indicating all doors and windows and at least two (2) escape routes from each room. Second story windows may need a rope or chain ladder.
- Have a family meeting to discuss your escape plan, and show everyone what to do in case an alarm sounds.
- Determine a place outside your home where you can all meet if an alarm occurs.
- Familiarize everyone with the sound of the Alarm and train them to leave the home when they hear it.
- Practice a CO / fire drill at least once every six months. Practice allows you to test your plan before an emergency. You may not be able to reach your children. *It is important they know what to do.*

WHAT TO DO WHEN THE ALARM SOUNDS:

- See SECTION 2.

11. SERVICE AND WARRANTY:

IMPORTANT! SAFETY INSTRUCTIONS:

In the event of any trouble with the unit, do not attempt to repair the unit. This product should be serviced by a qualified service technician. Return the unit for servicing to the appropriate address listed below.

FIVE-YEAR LIMITED WARRANTY

The manufacturer, Patrick Plastics Inc., warrants to the original consumer purchaser that this CO alarm shall be free from defects in materials and workmanship from the date of purchase for 5 years, and that the Ultralife U9VL-J lithium battery included will power alarm for 5 years.

If this CO alarm is determined to be defective in original materials or workmanship, or the battery does not last 5 years, return the alarm to the address indicated below with delivery costs prepaid. Do not attempt to repair this product yourself. If determined to be defective in original materials or workmanship, the CO alarm, or battery, will be repaired or replaced, at the sole discretion of the manufacturer.

This warranty is void if the CO alarm's plastic case has been opened or the product has been damaged by accident, modification of the unit, unreasonable use, neglect, tampering or other cause not arising from defects in original materials or workmanship.

The liability of the manufacturer, or of any of its parent or subsidiary corporations, arising from the sale of this product or under the terms of this limited warranty shall not in any case exceed the cost of the replacement of the CO alarm. In no case shall the manufacturer or any of its parent or subsidiary corporations be liable for consequential loss or damages resulting from the failure of the CO alarm to activate or for the breach of this or any other warranty, expressed or implied, even if the loss or damage is caused by the manufacturer's negligence or fault. These limitations or exclusions may not apply in some states where limitations on the duration of an implied warranty or exclusions or limitations of incidental or consequential damages are not allowed.

This warranty extends to the original consumer purchaser only and may not be altered by any agents, representatives, dealers, distributors or employees.

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